

## Oklahoma receives funding to expand research program

**By Chip Minty Staff Writer**

Oklahoma's hopes of building a technologybased economy received a \$9 million boost this month through a special grant program administered by the National Science Foundation.

Historically, the Sooner state has languished among the poorest states in the nation when it comes to federal funding for scientific research.

But Oklahoma this month took an important step forward in becoming a national asset in two of today's major fields of discovery.

It became one of five states chosen to receive a three-year, \$9 million grant from the foundation's Experimental Program to Stimulate Competitive Research (EPSCoR). The funding is designed put Oklahoma in a better position to compete for federal research funding in the future.

The Oklahoma State Regents for Higher Education have committed \$4.5 million in matching funds for a total infusion of \$13.5 million for new research programs.

The money allows the state's major research institutions to expand work in nanotechnology and functional genomics, two of the hottest fields in science, said Frank Waxman, state director of the grant program.

Nanotechnology is the term used to describe activities associated with building things one atom at a time. It's an emerging field that combines chemistry, physics and engineering to create functional materials, devices and systems so small, they're measured in nanometers.

A human hair is 10,000 times the width of a nanometer.

Functional genomics has grown from the Human Genome Project and is dedicated to answering fundamental questions about genetics for improving human health and the agriculture industry.

Money from the grant will pay for equipment and fund additional researcher salaries at Oklahoma State University, the University of Oklahoma, University of Tulsa and the Oklahoma Medical Research Foundation.

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About 20 years ago, the National Science Foundation created EPSCoR as a special funding program to curb an imbalance between states.

Historically, the majority of the federal government's research grants have been awarded in 29 states, said U.S. Rep. Ernest Istook, R-Warr Acres, a strong advocate for EPSCoR. The funding has resulted in economic advantages for those state, such as well-paying jobs and higher living standards.

Oklahoma EPSCoR director Waxman said Oklahoma is outside that elite group.

He said individual researchers are able to win small federal grants, but the thing that holds Oklahoma back is its inability to compete for the big awards that go to major research centers.

He said this month's grant will help the state establish a major presence in two important fields well-established in Oklahoma.

"While we do not expect to lead the world in functional genomics or nanostructured materials, we can realistically create niches in which Oklahoma research teams are national assets," Waxman said.

By building strong research bases in the two areas, Oklahoma will be in a better position to compete for major funding and to grow new industries that depend on highly skilled workers, he said.

Oklahoma was among five of 15 states chosen to receive one of the major grants, Waxman said.

He attributes the state's success to its existing strength in nanotechnology and functional genomics. Also, both areas are in the national spotlight, and they are fields heavily supported by government funding.

Ulrich Melcher, OSU biochemist and lead investigator in the grant program, said the money will allow OSU to expand its functional genomics research.

"This is incredible," he said.

It allows the school's program to move in a direction that it wouldn't have had the resources to do otherwise, Melcher said.

The grant will provide \$4.8 million for functional genomics research over the next three years. It will fund new faculty positions at the state's five major research institutions as well as money to support their work.

OSU and the Oklahoma Medical Research Foundation will get two new positions. OU in Norman, the OU Health Sciences Center in Oklahoma City and the University of Tulsa will each get funding for one researcher, Melcher said.

Melcher said he and his colleagues see the grant as a way to strengthen cooperation and establish Oklahoma as a center for functional genomics research.

Nanotechnology researcher and OSU chemist Warren Ford said the grant will help the state establish itself in the field.

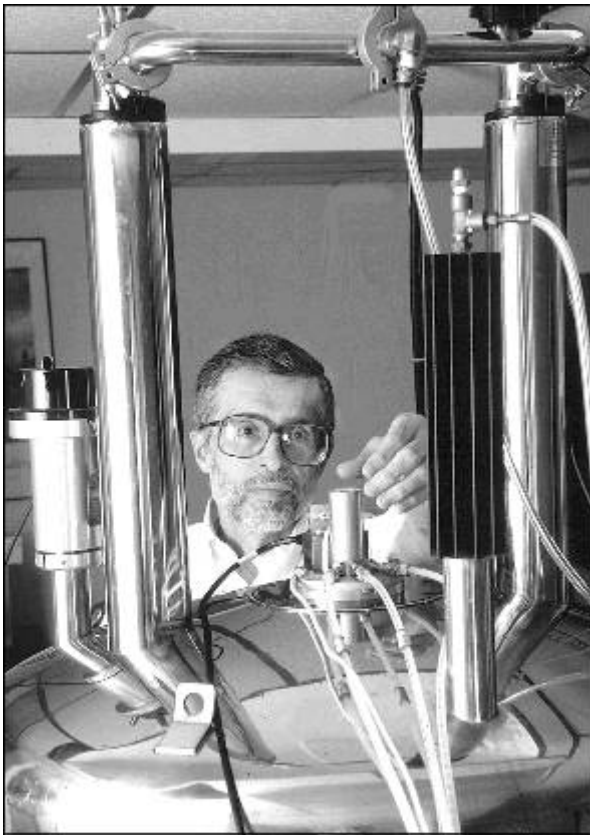
"Oklahoma and every other state is headed into nanotechnology anyway," he said. "This will be a boost for Oklahoma that other state's aren't getting."

He said the grant will provide \$4 million over three years to pay for support people and microscopic equipment for researchers at OSU, OU and TU.

An additional \$4.7 million from the grant will pay for other programs to enhance Oklahoma's national competitiveness, said Nancy Dixon, associate director of Oklahoma's EPSCoR program.

It will fund educational and outreach programs involving students, women in research and underrepresented minorities such as blacks and American Indians.

Other programs include a grant proposal-writing workshop and entrepreneurial training for undergraduate students, Dixon said.



Chemist and nanotechnology researcher Warren Ford works in his laboratory at Oklahoma State University. Ford is one of the lead investigators in a \$9 million grant the National Science Foundation awarded Oklahoma for research in nanotechnology and functional genomics.